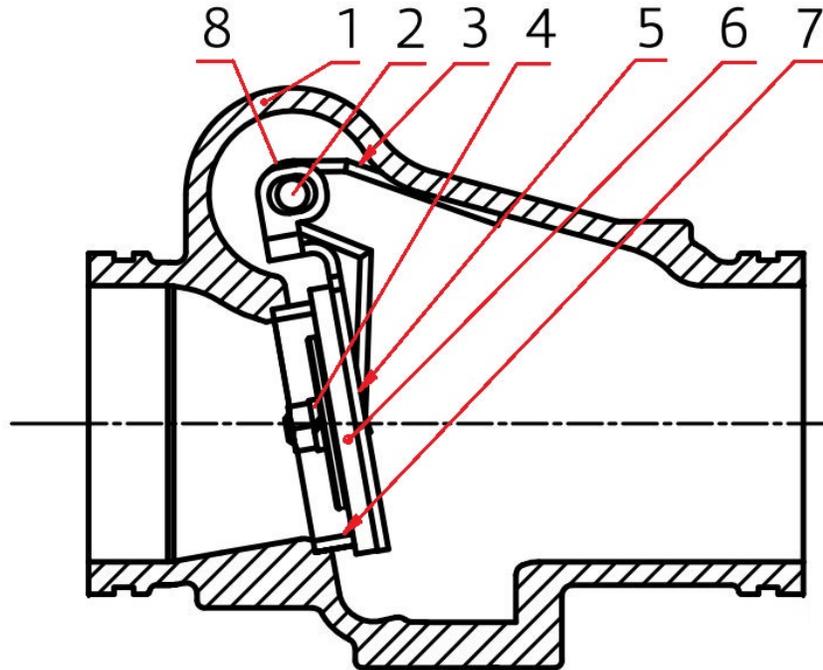


# SCI Series 67CV-A Grooved Ductile Iron Swing- Check Valve

## Installation, Operation and Maintenance Instructions



**Figure 1** – SCI Series 67CV-A Grooved Ductile Iron Swing Check Valve Cross Section



**Series 67CV-A Grooved Ductile Iron Swing Check Valve - Cross Section**

**Table 1** – SCI Series 67CV-A List of Materials (See Figure 1 for items illustrated)

| Item No. | Part Description | Material – Figure 67CVN-A (NITRILE)   | Material – Figure 67CVE-A (EPDM)  |
|----------|------------------|---|---|
| 1        | Valve Body       | Ductile Iron, ASTM A536 Gr 65-45-12   | Ductile Iron, ASTM A536 Gr 65-45-12   |
| 2        | Hinge Pin        | 420 Stainless Steel   | 420 Stainless Steel   |
| 3        | Spring           | 304 Stainless Steel   | 304 Stainless Steel   |
| 4        | Spring Washer    | 304 Stainless Steel   | 304 Stainless Steel   |
| 5        | Disc             | (2-1/2" – 4"): 304 Stainless Steel<br>(6" -8"): Ductile Iron, ASTM A536 Gr 65-45-12 | (2-1/2" – 4"): 304 Stainless Steel<br>(6" -8"): Ductile Iron, ASTM A536 Gr 65-45-12 |
| 6        | Seal Ring        | Nitrile Rubber (Disc Coating)   | EPDM Rubber (Disc Coating)  |
| 7        | Seat             | Lead-free Brass, C89833   | Lead-free Brass, C89833   |
| 8        | Bushing          | Lead-free Brass, C89833   | Lead-free Brass, C89833   |

## **Valve Installation** [See Figure 1 and Table 1 for part numbers listed in parentheses ( )]

These valves may be installed in the pipeline in any orientation or position using good piping practice. However, it is recommended to install the valve with the hinge pin (2) above the flow axis (in horizontal pipe) for optimum access and operation of the valve.

These valves should be installed in a horizontal pipeline with the body vertical (with hinge pin (2) above flow axis) using good pipe installation practice. These valves can also be installed in a vertical run of pipe, as long as the flow arrow on the body points upward (only).

These valves are equipped with grooved connections to AWWA C-606 to attach to adjacent pipe with the same connections. Refer to the installation instructions for grooved couplings for details of installing the valve in the piping system.

## **Valve Operation** [See Figure 1 and Table 1 for part numbers listed in parentheses ( )]

The operation of a swing check valve is automatic – no operator action is required.

The swing check valves are designed to permit flow in only one direction and stop flow in the reverse direction.

A flow arrow on the side of the valve body indicates the desired direction of fluid flow (free flow).

## **Valve Maintenance** [See Figure 1 and Table 1 for part numbers listed in parentheses ( )]

### **Safety Precautions Prior to Performing Maintenance:**

 **WARNING** – Do not attempt to perform maintenance on these valves in pressurized lines. Doing so may result in severe injury or burns due to hot fluids if there is an uncontrolled release of system pressure.

Before removing a valve from the pipeline, determine which media may be flowing through the valve. The media may be corrosive, toxic, flammable or contaminated. When there is evidence of hazardous fluids having flowed through the valve, additional precautions should be taken to avoid contact with these fluids and additional precautions should be taken when handling the valves during removal. Review the Safety Data Sheet (SDS) for any hazardous flowing fluids for any additional precautions. As a minimum, the following additional precautions should be taken.

1. Always wear OSHA-approved Safety Eyewear or face shields.
2. Always wear protective gloves and overalls or a chemical-resistant apron.
3. Wear protective footwear (e.g., safety shoes).
4. Wear protective headgear as required for the work area (e.g., hard hat – if required).
5. Ensure that running water is easily accessible (e.g., to rinse fluids from hands or valve / parts).
6. Have a suitable fire extinguisher ready if working with flammable media.

Check pipeline gauges to ensure that no pressure exists on either the upstream or downstream sides of the valve before performing any maintenance.

## **Valve Maintenance – continued:**

In normal service, no preventive maintenance is required to be performed on these valves.

These valves do not require lubrication or adjustment while in service.

Should the valve disc (5), its seal ring area (6) or seat (7) in the body become worn over time – such that its performance (leakage) is unacceptable – the valve should normally be replaced.

However, should only minor work need to be performed on the valve internals (e.g., removal of an internal obstruction or debris) the following steps should be performed:

### **Disassembly of the valve internals:**

D1. Unscrew the hinge pin (2) which is screwed into the valve body (1). Note: the thread that secures the hinge pin (2) may have sealant or tape to secure it to the body (1) and provide a pressure-tight joint. Use this same tape or sealant during reassembly or one which is equivalent and compatible with system fluid.

D2. The disc assembly (5), spring (3) and hinge bushing (8) should come loose and can be removed from the outlet side of the valve body (1). Set the parts aside for inspection.

D3. Remove any internal obstructions inside the valve that may be blocking the disc (5) and inspect the seal ring area (6) and seat (7) surfaces (installed in the body) or the disc (5) itself for any obvious damage or material that adheres to either surface. Note: extensive damage to the seat (7) surfaces, the disc (5) or seal ring area (6) may warrant replacement of the entire valve – since refurbishment or replacement of the disc & seal (5 & 6) or body seat (7) may be too costly.

D4. Inspect the condition of the rubber (Nitrile or EPDM) seal area (6) on the disc (5) to see if it is damaged. If the seal ring (6) area (coating) on the disc (5) appears to be the only thing damaged, a replacement disc would be needed from the factory.

### **Reassembly of the valve after repair or refurbishment:**

R1. Place the disc (5) assembly, spring (3) and bushing (8) back into the body (1) and secure in place with the hinge pin (2). Note: if thread sealants had been used on the original hinge pin (2), use the same or equivalent thread locking compound to secure the hinge pin into the body (1). Use the same torque on the hinge pin (2) as was necessary to remove it – or at least snug plus ¼ turn.

R2. If the valve has been removed from the pipeline and the hinge pin (2) has been removed, it is recommended to re-test the valve to a minimum of 330psig (110% of rating) with water, or 80 to 100psig air pressure to ensure the body and hinge pin (2) penetration connection is tight. If the valve is installed in the pipeline, it is recommended to perform this test to maximum system pressure possible and to ensure the valve shuts off in the reverse flow direction.